



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,098	09/24/2003	Manabu Ishikawa	50395-229	1843
7590 07/13/2005 MCDERMOTT, WILL & EMERY 600 13th Street, N.W. Washington, DC 20005-3096			EXAMINER KIM, JOANNE H	
			ART UNIT 2883	PAPER NUMBER

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/669,098

Applicant(s)

ISHIKAWA ET AL

Examiner

Joanne H. Kim

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/16/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
in page 5, line 3, "Fig. 13" should be "Fig. 3."
Appropriate correction is required.

Claim Objection

2. Claims 4 and 6 are objected to because of the following informalities: the term "insulator" needs to be defined (for example, thermal insulator or electrical insulator).
Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (U.S. Patent Pub. No. 2002/0126456, hereinafter "Sato") in view of Miller et al. (U.S. Patent No. 6,851,869, hereinafter "Miller").

Regarding claims 1, 3 and 4, Sato discloses an optical module comprising: an optical subassembly (6) including a semiconductor optical device; a substrate (26) securing the optical subassembly and mounting a circuit for driving the semiconductor

Art Unit: 2883

optical device, the circuit generating heat; a base (2) enclosing the optical subassembly, the base providing an opening for exposing the circuit; a conductive cover (28); a thermal block (60) for dissipating the heat generated by the circuit, the thermal block arranged so as to lid the opening of the base and being thermally in contact with the circuit and the cover; and a thermal sheet (62c) made of an insulator disposed between the thermal block and the circuit (Figs. 8, 9, 12A, and 15A; and paragraphs [0082], [0086], [0089], and [0103]).

Sato does not specifically disclose that the cover is made of metal.

Miller discloses that opto-electronic transceiver connectors are well known and are typically made of metal (column 1, lines 47-48).

It would have been obvious to one of ordinary skill in the art to modify Sato to include a cover made of metal.

The motivation would have been to improve heat dissipation and to use for grounding or EMI shielding.

Regarding claims 5 and 6, Sato discloses the optical module comprising the thermal sheet made of insulator disposed between the thermal block and the circuit.

However, Sato does not disclose that the thermal sheet is disposed between the cover and the optical subassembly.

It would have been obvious to one of ordinary skill in the art to modify Sato to include the thermal sheet between the cover and the optical subassembly.

The motivation would have been to protect the optical subassembly.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Miller as applied to claim 1 above, and further in view of Harding (U.S. Patent Pub. No. 2003/0021310).

The combination of Sato and Miller discloses the optical module comprising the circuit generating heat, the cover and the thermal block for dissipating the heat generated by the circuit. The thermal block, which is thermally conductive and electrically insulating, partitions an inner space of the base (Fig. 8).

The combination of Sato and Miller does not disclose that the thermal block is made of metal.

Harding discloses an optical device comprising a circuit generating heat, a cover and a thermal block for dissipating the heat made of Aluminum Nitride (AlN), which is thermally conductive and electrically insulating.

It would have been obvious to one of ordinary skill in the art to modify the combination of Sato and Miller to include a thermal block made of metal such as that taught by Harding.

The motivation would have been to improve heat conductivity from the circuit to the cover.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joanne H. Kim whose telephone number is (571) 272-2139. The examiner can normally be reached on 8:30 a.m. to 5:00 p.m.

Art Unit: 2883

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joanne H. Kim
Examiner
Art Unit 2883

jhk/FGF



Frank G. Font
Supervisory Patent Examiner
Technology Center 2800